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09/933,334	08/20/2001	Motomichi Mishima	MAT-8180US	5968

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EXAMINER

DUONG, THANH P

ART UNIT

PAPER NUMBER

1764

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/933,334	<b>Applicant(s)</b> MISHIMA ET AL.	
	<b>Examiner</b> Tom P Duong	<b>Art Unit</b> 1764	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 August 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 27-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 3 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C.

121:

- I. Claims 1-26, drawn to a purifier to purify exhaust gas, classified in class 422, subclass 177.
- II. Claims 27-34, drawn to a garbage disposer, classified in class 100, subclass 92.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination.

Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the main heater of the storage section of the garbage disposer has utility by itself for drying the refuse without incorporating the subcombination of the purifying device. The subcombination has separate utility such as purifying waste gas from other industrial waste gas stream such as from semiconductor industry other than garbage from municipal waste.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Lawrence E. Ashery on September 13, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 27-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Specification***

The disclosure is objected to because of the following informalities:

Page 1, line 12, "Fig. 13" should be replaced with --Fig. 12--.

Appropriate correction is required.

### ***Claim Objections***

Claim 3 is objected to because of the following informalities:

In claim 3, "exhaust heater" should be replaced with --catalyst heater-- for enhanced consistency with claim 1.

In claim 14, "furtier" should be replaced with --further--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-14, 17-18, 23, and 26 are rejected under 35 U.S.C. 102(a) as being anticipated by Japanese Publication Number 2000-218130 (JP '130). JP '130 discloses a purifier (Fig. 1) to purify exhaust gas, comprising: (a) a cylindrical case (3) having an inlet (1) and an outlet (2); (b) a plurality of circular, metallic thin plates (fin 7) disposed in said case, said thin plates being arranged at predetermined intervals, and each of said thin plates having at least one through-hole (gap of between blades 7a and 7c); (c) a catalyst held to each of said thin plates (Abstract); said catalyst having a function of purifying the exhaust gas; (d) partition plates (twisted blades 7a and 7c, formed communication part)

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disposed between the respective thin plates, said partition plates partitioning the spaces between the respective thin plates; and (e) a catalyst heater (8) to heat each of said thin plates, wherein the exhaust gas enters into said case from said inlet, and passes through the spaces formed between the respective thin plates, and each of said through-holes (space between the blades), and is exhausted from said outlet; catalytic heater installed in metallic pipe 6; raised partition plate (15); catalyst wire netting (10); a heat insulation material (9); radiation fin (7); and a suction fan (20).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 5-9, 13-19, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-05154348 (JP '348) in view of Say et al. (5,790,934) and Gutkowski et al. (3,152,988). Regarding claims 1, 5-9, 13-14, 17-18, and 26, JP '348 discloses a purifier (1) to purify exhaust gas, comprising: (a) a case (2) having an inlet (21) and an outlet (22); (b) a plurality of thin plates (3) disposed in said case, said thin plates being arranged at predetermined intervals (as shown in Figure 1), and each of said thin plates having at least one through-hole (30); (c) a catalyst (32) held to each of said thin plates (3); said catalyst having a

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function of purifying the exhaust gas; (e) a catalyst heater (power source 9) to heat each of said thin plates, wherein the exhaust gas enters into said case from said inlet (21), and passes through the spaces (30) formed between the respective thin plates, and each of said through-holes, and is exhausted from said outlet. JP '348 fails to disclose the (d) partition plates disposed between the respective thin plates, said partition plates partitioning the spaces between the respective thin plates. Say teaches the fins 302 (plates) can be fabricated with the fins 302 (partition plates) to promote turbulent flow, direct fluid flow, and create cross-stream vortices. Likewise, Gutkowski teaches the stud-like members 17 are adapted to form the spacing between the disc members 11 and 12 to define a fluid communication passage 20 (Col. 2, lines 8-17). Thus, it would have been obvious in view of Say and/or Gutkowski to modify the purifier of JP '348 to include the partition plates of Say and/or Gutkowski in order to gain the above benefits. Regarding claims 2 and 7, the combination of the above prior art teaches the gases are passed to the through-hole and partition plate. Regarding claims 13-14, JP '348 discloses a radiation fin (3) but fails to disclose a catalyst heater is piercing through the radiation fin. Say teaches the catalyst heater (304) is disposed orthogonal to the fins 302 (Fig. 6) to facilitate the conversion of the contaminants in the fluid stream to a less harmful stream (Col. 3, lines 41-46). Thus, it would have been obvious in view of Say to one having ordinary skill in the art modify the purifier of JP '348 with a catalyst heater piercing thru the radiation fin as taught by JP '348 in order to facilitate the conversion of the contaminants in the fluid stream to a less harmful stream.

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Regarding claim 15, JP '348 discloses a honeycomb catalyst disposed in said case (2) wherein the exhaust gas passes through said honeycomb catalyst (Section 0009). Regarding claim 16, JP'348 fails to disclose each of the thin plates has on the surface of same; the catalyst is disposed on the irregularities formed irregular surfaces; and the exhaust gas comes in contact with the irregular surfaces having the catalyst while passing thereon. Gutkowski teaches the irregularities (protuberances of stud-like member 17) on the surface of disc members 11 and 12 to form the spacing between the disc members 11 and 12 to define a fluid communication passage 20. Thus, it would have been obvious in view of Gutkowski to one having ordinary skill in the art to modify the purifier of JP '348 with the irregularities as taught by Gutkowski in order to form a fluid passage between the disc members. Regarding claim 19, JP '348 fails to disclose a plurality of catalyst heaters are disposed piercing through a plurality of thin plates. Say et al. teaches a plurality of catalyst heaters (light source 104, Fig. 1 and light source 304', Fig. 6) are disposed piercing through the thin plates (302) and the light source activates the catalyst to convert the contaminates to other less harmful compounds (Col. 3, lines 40-46 and Col. 4, lines 22-30). Regarding claim 24, it is conventional to provide a heater disposed at the periphery of the inlet pipe and it would have been obvious to do so here to preheat the gas stream prior feeding to the deodorizer.

3. Claims 3-4 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (JP '348 in view of Say '934 and Gutkowski et al. '988) as applied to claim 1 above, and further in view of prior art



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Admission. The applied references fail to disclose a low-temperature catalyst disposed in at least one of said inlet pipe and said outlet pipe. Admission discloses a catalyst heater 108 (Fig. 12) is disposed in the metallic pipe to facilitate the oxidation and decomposition of the odor substance (Specification, page 2, lines 9-11). Thus, it would have been obvious in view of Admission to one having ordinary skill in the art to modify the apparatus of the applied reference with a catalyst heater disposed in the pipe as taught by Admission to facilitate the oxidation and decomposition of the odor substance. With respect to the thin plates made of metal, JP '348 discloses the thin plate (3) made of metal (Section 0013).

4. Claim 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (JP '348 in view of Say '934 and Gutkowski et al. '988) as applied to claim 1 above, and further in view of Japanese Publication Number 2000-218130 (JP '130). Regarding claims 10-11, the applied references fail to disclose the a wire netting disposed along the periphery of the thin plates and the wire netting holds other catalyst. JP '130 teaches the wire netting (metallic thin plate 9) can support the catalyst to increase the decontamination surface area. Thus, it would have been obvious in view of JP '130 to one having ordinary skill in the art to modify the purifier of the applied references with the catalyst wire netting as taught by JP '130 in order to increase the decontamination surface area. Regarding claim 12, the applied references fail to disclose a heat insulation material disposed between the circumference of thin plates and the inner wall of case. JP '130 teaches the heat insulator 10 (Fig.

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1) is provided in the periphery of fin 7 in order to maintain the temperature of the catalytic reaction and prevent heat loss to the surrounding. Thus, it would have been obvious in view of JP '130 to one having ordinary skill in the art to modify the purifier of the applied references with a heat insulation material as taught by JP '130 order to gain the above benefits.

5. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (JP '348 in view of Say '934 and Gutkowski et al. '988) as applied to claim 1 above, and further in view of Tomizawa et al (5,740,725). The applied references fail to disclose a temperature detector disposed near said inlet, wherein said temperature detector has a function of detecting the temperature of said catalyst heater and stopping the power supply to said catalyst heater. Tomizawa teaches the catalyst temperature detector 326 (Col. 15, lines 1-6) can be mounted upstream or downstream side of the catalyst (Col. 14, lines 55-62) in order to monitor the concentration of the gas stream (Col. 15, lines 1-3). Thus, it would have been obvious in view of Tomizawa to one having ordinary skill in the art to modify the purifier of the applied references with a temperature detector as taught by Tomizawa in order to monitor the concentration of the gas stream. Regarding claim 23, the applied references fail to disclose an outlet pipe disposed at the outlet and a suction fan attached to outlet pipe. Tomizawa teaches a outlet pipe (Fig. 5) connected to the suction fan (46) in order to facilitate the exhaust of the gas stream (Col. 9, lines 64-67) and the suction fan (46) established a negative pressure to prevent leak of smell from the equipment (Col. 10, lines 1-4). Thus, it would have been obvious in view of

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Tomizawa to one having ordinary skill in the art to modify the purifier of the applied references with an outlet pipe and a suction fan as taught by Tomizawa in order to facilitate the removal of gas stream from the equipment (deodorizer).

***Allowable Subject Matter***

Claims 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong  
September 16, 2004

TD



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